

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Tomohiro Oshiyama *et al.*) Group Art Unit: 1794
)
Serial No.: 10/795,850) Confirmation No.: 1242
)
Filed: March 8, 2004) Examiner: Thompson, Camie S.

For: **ORGANIC ELECTROLUMINESCENT ELEMENT AND DISPLAY EMPLOYING THE SAME**

VIA EFS WEB

Assistant Commissioner for Patents
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REPLY BRIEF

I. STATUS OF THE CLAIMS

Claims 1-7 and 9-12 are pending in the present Application.

Claims 1-7 and 9-12 stand finally rejected.

Claims 1-7 and 9-12, as they currently stand, are set forth in Appendix VIII.

Appellants hereby appeal the final rejection of Claims 1-7 and 9-12.

II. STATUS OF THE AMENDMENTS

No amendments have been filed subsequent to the final rejection dated January 28, 2008. All prior amendments have been entered.

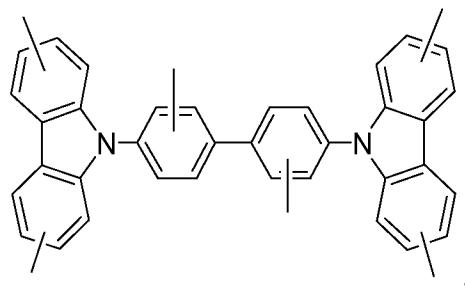
III. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-7 and 9-12 stand rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over U.S. Patent No. 6,902,830 A1 to Thompson *et al.*, (hereinafter “Thompson”).

IV. ARGUMENT

Claims 1-7 and 9-12 are not obvious over the cited art for the reasons provided below.

In the EXAMINER'S ANSWER, the Examiner comments that the Thompson reference discloses the following molecules:



“wherein a line segment denotes possible substitution at any available carbon atoms or atoms of the indicated rings by alkyl or aryl groups (see columns 32, line 40 - column 33, line 33).”¹ The Examiner further comments that “Thompson does not specifically disclose that the substituent on the phenylene group is substituted on the phenylene group is substituted at the ortho position to the chemical bond”, that “Thompson does disclose possible substitution at any available carbon atom by alkyl and aryl groups” and that “substitution position on the compound affects HOMO and LUMO energies.”² Based on this interpretation, the Examiner then concludes that “[t]herefore, it would have been obvious to one of ordinary skill in the art to have the substituent present at the ortho position in order to control current-voltage characteristics and the lifetime of the device.”³

As discussed in Applicants' previous Appeal Brief, the Supreme Court , in addressing the issue of obviousness in *KSR International Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007), has indicated that it remains legally insufficient to conclude that a claim is obvious “merely by

¹ Examiner's Answer, page 4, lines 1-3

² Examiner's Answer, page 4, lines 6-9

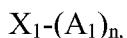
³ Examiner's Answer, page 4, line 9-11

demonstrating that each element was, independently, known in the prior art.” *KSR*, 127 S. Ct. at 1731. The Court further stated that it is important for the Examiner to “identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.* at 1731. The Court also indicated that, “this analysis should be made explicit.” *Id.* The Examiner has provided no such analysis. Simply put, Thompson fails to teach or suggest a host compound including an ortho substitution as claimed and/or a host compound having a reorganization energy of from more than 0 to 0.50 eV.

In the Examiner’s discussion as it relates to Appellants’ arguments in its Appeal Brief, the Examiner *incorrectly* comments that the CBP compound as disclosed in the Thompson reference reads on the Appellants’ claimed host compounds because of its structure and because it has a reorganization energy of 0.56 eV.⁴ First, it should be apparent that Appellants’ independent claims 1 and 10 are directed to organic electroluminescent elements comprising, *inter alia*, a host compound, the host compound having a reorganization energy of from more than 0 to 0.50 eV. As positively claimed, the lower limit of the reorganization energy for the host compound is greater than 0 and the upper limit is 0.50 eV. Since CBP has a reorganization energy of 0.56 eV, which is greater than Appellants’ claimed upper limit of 0.50 eV, CBP does not read on claim 1 in view of the reorganization energy feature.

In addition, Claims 1 and 10 further define the host compound as being “represented by Formula 1 below,

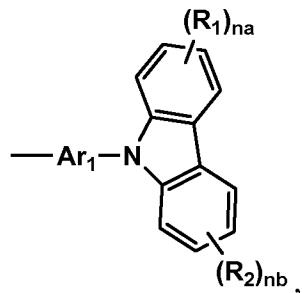
Formula 1:



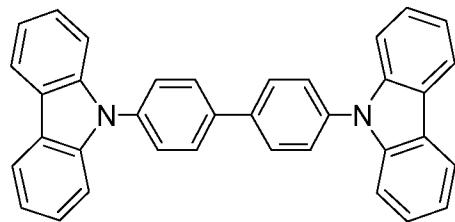
wherein X_1 represents a chemical bond; n represents an integer of 2; and A_1 represents a group represented by the following Formula 2 below, provided that plural A_1 s may be the same or different;

⁴ Examiner’s Answer, page 6, lines 3-18

Formula 2:



wherein Ar₁ represents a substituted phenylene group having a substituent in an ortho position relative to the chemical bond.” Keeping in mind that Appellants have positively recited in its claims that Ar₁ represents a substituted phenylene group having a substituent in the ortho position, CBP has the following formula, which clearly shows the divalent aromatic ring as having no substitution, nevermind a substitution in the ortho position as required by the claims.



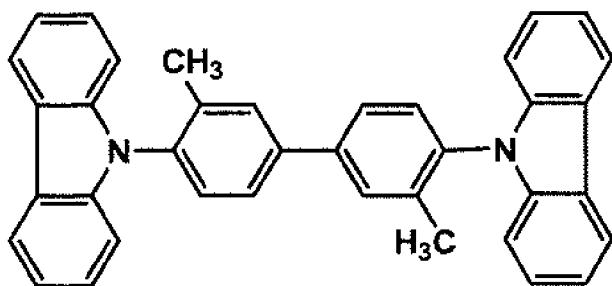
CBP

Thus, the Examiner’s conclusion that CBP reads on the present claims is wrong. Moreover, CBP fails to have a reorganization energy of from more than 0 to 50 eV in addition to failing to disclose a substituted phenylene group having a substituent in the ortho position.

It is further noted that the Examiner has drawn a similar conclusion with respect to Appellants’ declaratory evidence submitted under 37 CFR 1.132 during prosecution of the present application and presented in Appellants’ Appeal Brief at Appendix IX. The Examiner

has acknowledged that this Declaration included comparative data as it related to a Compound C.⁵ Compound C is a host compound (as described below) that includes a substituted phenylene group having a substituent in the meta position relative to a chemical bond, corresponding to X1 of Formula 1 as recited in Claims 1 and 10, i.e., a chemical bond combining the two benzene rings and not in the ortho position to the chemical bond as claimed by Appellants.

Compound C



In the above chemical structure of Compound C, each of the two methyl groups is positioned on each benzene ring in the meta position to a chemical bond combining the two benzene rings but not in the ortho position to the chemical bond.

Compound C was utilized in Appellants' Declaration for comparison with a compound that did read on Appellants' claims. The Examiner commented that "it was found by Appellants declaration that the reorganization energy of compound C was 0.58 eV" and that "these results read on the present claims."⁶ The Examiner goes on to state that the "present claims require that the reorganization energy is more than 0 to 0.50 eV, which would include 0.58 eV."⁷ Appellants are bewildered by this conclusion since (1) Appellants claim that the host compound include a substituted phenylene group having a substituent in the ortho position not the meta position; and (2) Appellants claim that the host compound have a

⁵ Examiner's Answer, page 7, lines 4-5

⁶ Examiner's Answer, page 7, lines 7-9

⁷ Examiner's Answer, page 7, lines 9-10

reorganization energy of more than 0 to 0.50 eV. Compound C's reorganization energy of 0.58 is greater than the upper limit of Appellants claimed range, which was also clearly labeled and characterized by Appellants in the Declaration as being comparative. Thus, the Examiner's comment that Compound C reads on Appellants claims is wrong. Interestingly, the Examiner commented that Appellants' test data for a compound representative of its claimed invention, TBCBP, was encompassed by Thompson even though this particular compound exhibited a reorganization energy of 0.41 eV, which clearly falls within Appellants' claimed range for reorganization energy of from more than 0 to 0.50 eV. Either the Examiner is very confused as to the reorganization energy range or has chosen to completely disregard this claim feature. Regardless, in view of the foregoing, Thompson fails to establish a *prima facie* case of obviousness for at least the reasons set forth above.

In view of the foregoing and Appellants' comments provided in its Appeal Brief, Appellants respectfully request removal of the 35 U.S.C. §103 rejection against independent Claims 1 and 10 and of Claims 2-7 and 9-12, which depend therefrom.

If there are any additional charges with respect to this Appeal Brief, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

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